Wheeling Corrugating Company
A DIVISION OF WHEELING-PITTSBURGH STEEL CORPORATION
Since 1890

Material Safety Data Sheet

MSDS Number WCC-99-03
Prepared 09/99

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Galvanized BarnMaster, 5-V, and Industrial Siding Products
Chemical Formula: Galvanized Steel
CAS Number: Not Assigned
Other Designations: None
General Use: Galvanized Steel Building Products for Roofing, Siding, and Accessories
Manufacturer: Wheeling Corrugating Company, 1134 Market St., Wheeling, WV 26003
General Information: (304) 234-2332
Emergency Phone Number: (304) 234-7628

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Hazard is from welding fumes and grinding dust. May cause eye irritation and metal fume fever from prolonged exposure to metal fume. Persons with pre-existing respiratory impairment may be at an increased risk from exposure.

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt *or* % vol
Iron	7439-89-6	>97.0
Manganese	7439-96-5	<1.0
Zinc	7440-66-6	<2.0
Residual Metal Treatment		
Phosphoric Acid	7664-38-2	<1.0
Chromium Phosphate	7789-04-0	<1.0
Chromium Trioxide	1333-82-0	<1.0
Nitric Acid	7697-37-2	<1.0
Stoddard Solvent	8052-41-3	<1.0
Hydrotreated Naphthenic Base Oil	64742-52-5	<1.0
Sodium Petroleum Sulfonate	68608-26-4	<1.0

Trace amounts of coating oil may be present as petroleum aliphatic hydrocarbons, CAS Number 64742-47-8

Ingredient	OSHA PEL TWA (mg/m³)	OSHA PEL STEL (mg/m³)	ACGIH TWA (mg/m³)	ACGIH STEL (mg/m³)	NIOSH REL TWA (mg/m³)	NIOSH REL STEL (mg/m³)	IDLH (mg/m³)
Iron	10 (as Iron oxide fume)	NE	5 (Iron oxide dust & fume)[1]	NE	5 (Iron oxide dust & fume)	NE	2500 (Iron oxide dust & fume as Fe)
Manganese	NE	("C") -5 0 (fume or compound)	0 2 (elemental & inorganic compounds as Mn)	NE	1 (fume)	3 (fume)	500 (fume as Mn)
Zinc	5 (as resp ZnO dust or fume) 15 (total ZnO dust)	NE	5 (ZnO fume) 10 (ZnO dust)	10 (ZnO fume)	5 (ZnO fume/dust)	10 fume) ("C") 15 0 (ZnO dust)	500 (ZnO)
Phosphoric Acid	1	NE	1	3	1	3	1000
Chromium Phosphate	0 5 (as CrIII)	NE	0 5 (as CrIII)	NE	0 5 (as CrIII)	NE	25 (as Cr III)
Chromium Trioxide	NE	("C") - 0 1 (Cr VI, as chromic acid and chromates, CrO_3)	0 05 (water-sol Cr VI compounds, NOC[2]) 0 01 (insol CrVI compounds, NOC[2])	NE	0 001 (Cr VI)	NE	15 (Cr VI)
Nitric Acid	5	10	5	10	5	10	64 5
Stoddard Solvent	2900	NE	100	NE	350	("C") -1800	20,000
Hydrotreated ϕ Naphthenic Base Oil	NE	NE	NE	NE	NE	NE	NE
Sodium Petroleum Sulfonate	NE	NE	NE	NE	NE	NE	NE
Aliphatic Hydrocarbons *	NE	NE	NE	NE	NE	NE	NE

The PELs are 8-hour TWAs unless otherwise noted; a (C) designation denotes a ceiling limit which should not be exceeded during any part of the working exposure A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure which should not be exceeded at any time during a workday.

NE – None Established

1 – The TLV is for particulate matter containing no asbestos and <1% crystalline silica.

2 – NOC = Not otherwise Classified

ϕ - This component does not have recognized exposure limits However, an exposure limit of 5.00 mg/m3 is suggested for oil mist and adopted by the manufacturer.

***** - Manufacturer recommended exposure limit is 300 ppm (as total hydrocarbons)

Toxicity Data: No LC_{50} or LD_{50} has been established for the mixture as a whole Iron LD_{50}: 30 mg/kg subcutaneous-dog LDLo, 500 ug/m3/24 hours-61 days continuous inhalation-rat TCLo (Iron oxide);

Section 3 - Physical and Chemical Properties

Physical State: Solid
Appearance and Odor: Odorless, metallic gray
Odor Threshold: N/A
Vapor Pressure: N/A
Vapor Density (Air=1): N/A
Formula Weight: N/A
Density: N/A
Specific Gravity (H_2O=1, at 4 °C): 8
pH: N/A

Water Solubility: Insoluble
Other Solubilities: N/A
Boiling Point: N/A
Freezing/Melting Point: >1500 F
Viscosity: N/A
Refractive Index: N/A
Surface Tension: N/A
% Volatile: N/A
Evaporation Rate: N/A

N/A = Not Applicable

Section 4 - Fire-Fighting Measures

Flash Point: N/A
Flash Point Method: N/A
Burning Rate: N/A
Autoignition Temperature: N/A
LEL: N/A **UEL:** N/A
Flammability Classification: N/A
Extinguishing Media: N/A for solid product. Use extinguishers appropriate for surrounding materials
Unusual Fire or Explosion Hazards: N/A for solid product Do not use water on molten metal
Hazardous Combustion Products: N/A. At temperatures above the melting point, fumes containing metal oxides and other elements may be liberated
Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode and full protective clothing.

N/A = Not Applicable

Section 5 - Stability and Reactivity

Stability: Steel products are stable under normal storage and handling conditions.
Polymerization: Hazardous polymerization cannot occur.
Chemical Incompatibilities: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.
Conditions to Avoid: None
Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron, manganese, and chromium as well as other elements

Section 6 - Health Hazard Information

Potential Health Effects

Primary Entry Routes: Inhalation Steel products in the natural state do not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing and grinding may result in the following effects if exposures exceed recommended limits as listed in Section 2.
Target Organs: Respiratory
Acute Effects:
Inhalation: Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0 05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fevers, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost All symptoms usually subside within 24-36 hours Exposure to chromium may irritate the lungs.
Eye: Particles of iron or iron compounds, which become imbedded in the eye, may cause siderosis with varied side effects
Skin: Exposure to chromium may cause dermatitis.

Ingestion: N/A

Carcinogenicity: IARC, NTP, and OSHA do not list steel products as carcinogen. The NTP lists chromium as a carcinogen, and respirable silica as a potential carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e , asthma, chronic bronchitis, emphysema, etc) may be adversely affected by any fume or airborne particulate matter exposure

Chronic Effects: Chronic exposure to iron oxide may cause dyspnea and chronic bronchitis. Repeated exposure, usually from 6-10 years, to iron oxide fumes/dust may cause a benign pneumoconiosis (siderosis) which may cause X-ray shadows that can be indistinguishable from fibrotic pneumoconiosis Chronic exposure to chromium may cause various forms of dermatitis, inflammation and/or ulceration of the upper respiratory tract and possible cancer of the nasal passages and lungs.

Emergency and First Aid Procedures

Inhalation: For over-exposure to airborne fumes and particulate, remove exposed person to fresh air If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated Seek medical attention promptly.

Eye Contact: Flush with large amounts of clean water to remove particles. Seek medical attention.

Skin Contact: Remove contaminated clothing Wash affected areas with soap or mild detergent and water.

Ingestion: Seek medical attention immediately

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: N/A

Special Precautions/Procedures: N/A

N/A = Not Applicable

Section 7 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures:

Small Spills: Clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Collect material in appropriate, labeled containers for recovery or disposal.

Large Spills

Containment: For large spills, dike far ahead of molten metal spill for later disposal. Do not release into sewers or waterways

Cleanup: See above

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910 120) and all other pertinent state and federal requirements.

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations

EPA Regulations:

SARA Toxic Chemical (40 CFR 372.65) Manganese and chromium.

SARA Potential Hazard Categories. Immediate (acute) health hazard, Delayed (chronic) health hazard.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source

Administrative Controls: Do not use compressed air to clean-up spills

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres* If respirators are used, OSHA requires a written respiratory protection program that includes at least· medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, gloves and safety glasses to prevent skin and eye contact Contact lenses are not eye protective devices Appropriate eye protection must be worn instead of, or in conjunction with contact lenses

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics. Where operations may generate dust or fume, employee exposure monitoring should be conducted to evaluate and document the potential hazard. Provide pre-placement and annual physical examinations for exposed workers with emphasis on respiratory and cardiovascular systems and the skin. Preclude from exposure those individuals with pulmonary disease and skin sensitization

Handling Precautions: Inhalation of dust and contact with eyes and skin should be avoided. Good housekeeping practices should be followed to prevent accumulation of dust and proper cleaning techniques will keep airborne dust to a minimum.

Storage Requirements: Do not store with calcium hypochlorite.

DOT Transportation Data (49 CFR 172.101):

Not regulated by this mode of transportation.

Disclaimer: While the information and recommendations set forth on this MSDS are believed to be accurate as of the present date, the company makes no representation or warranty with respect thereto and disclaims all liability from reliance thereon.